Attorney Docket No.: 6809.230-US
Application Serial No.: 10/768,371
Filed: January 30, 2004
Inventors: Igor Gonda et al.
Via Facsimile No.: 571-273-8300

REMARKS

In the hopes of negating the need for an appeal, Applicants respectfully request entry of this amendment. Applicants note that while they believe that this amendment puts all claims in condition of allowance, it also reduces issues for an appeal should an appeal be necessary, and therefore should be entered. Should the Examiner not believe that the following remarks place the pending claims in condition for allowance he is urged to contact the Applicant's attorney to arrange an interview if he feels that an interview would be useful in negating the need for an appeal.

Claims 2, 5, 6, and 10 have been cancelled thereby disposing of the need to appeal the 103 rejection based on Laube in view of Weiner in view of Blackstrom. The remaining claims stand rejected under 103 in view of Laube and Weiner. Claims 1,3,4,7,8,9,11-25 are presently pending.

Arguments Applicable to all Pending Claims

Applicants' pending claims are directed toward a method of treating diabetes. According to the claimed methods, diabetics who lack the ability, *absent medical treatment*, to maintain an adequate blood sugar level, can achieve acceptable blood glucose levels by inhaling powdered insulin. Applicants note that the claims require that the diabetic lack sufficient ability to produce insulin on his own in quantities necessary to regulate blood sugar levels and that the inhalation of powdered insulin results in the regulation of blood sugar levels to an acceptable levels. To be an effective treatment, the claims further require that the insulin be absorbed in a repeatable and controlled manner and not merely be inhaled in controlled and repeatable quantities. These features are necessary for inhaled powdered insulin to be a useful treatment for diabetics.

In the previous office actions, the Examiner has asserted that these pending claims are obvious in

view of Laube and Weiner. According to the Examiner, Laube discloses inhaling liquid insulin and Weiner discloses inhalation of powdered insulin. Assuming, without conceding that the Examiner has correctly characterized Laube, the rejection must be withdraw, because the totality of the references teach away from the claimed invention.

It is well-settled patent law that if the art teaches away from the claimed invention, then the claimed invention is not obvious. See MPEP 2141.02, 2145, WL Gore and Associates Inc. v. Garlock Inc., 721 F.2d 1540 (Fed. Cir. 1983). Here, Laube does not teach that powdered insulin can be used to help a type I diabetic, who lacks the ability to maintain acceptable blood glucose levels on his own, to achieve acceptable blood glucose levels. While Weiner does suggest inhaling powdered insulin it explicitly teaches away from the claimed invention by teaching that inhalation of powdered insulin "***will not eliminate the need for parenteral insulin therapy in patients with damaged beta cells who do not produce enough insulin to regulate their blood sugar***." Col 6, line 1-14. Indeed, all Weiner suggests is that patients on the verge of contracting type I diabetes may stop onset of the disease by inhaling or swallowing insulin, if the inhalation or ingestion takes place before beta cell damage has occurred. Thus, even if one were to believe that Weiner discovered a cure for type I diabetes, Weiner's own disclosure shows that he does not have a treatment for treating diabetic patients who have suffered sufficient beta cell destruction such that they cannot regulate their blood sugar on their own. Accordingly, when the references are read together as the Examiner suggests, they –at best—suggest that liquid insulin can be inhaled to lower blood glucose levels and that powdered insulin can stop the onset of type I diabetes if inhaled or ingested before beta cell destruction has progressed.

The WL Gore case cited above is dispositive and as a legal matter requires reversal of the Examiner's rejection. In that case, the Federal Circuit stated clearly and unambiguously that two references cannot be combined to make the claimed subject matter obvious where one reference teaches that a certain material cannot be used in the claimed manner even though the second

reference might show that a similar substance can be used in the claimed manner. In particular, in WL Gore, the court noted that one of the reference taught that PTFE could not be handled in the same manner as other plastics. A second reference teaching that plastics could be handled in a certain way, e.g. rapidly stretched, was therefore not amenable to combination with the first reference. In the file history of the present application, the Examiner has cited a reference that says clearly and unambiguously that powdered insulin cannot be used to maintain adequate blood sugar control in diabetics who lack the ability to produce enough insulin on their own. The second reference suggests that liquid insulin can be inhaled and result in some blood glucose lowering affect.[1] Thus, the references expressly teach away from inhaling powdered insulin to treat diabetes.

Additional Arguments with Respect to Claim 7

Applicants further note that claim 7 is explicitly limited to a method of treating a type II diabetic. As Weiner teaches only that type I diabetes may be cured or prevented by pulmonary or oral administration of insulin before the autoimmune response in a type I diabetic destroys large numbers of beta cells, it is irrelevant to the invention of claim 7, which is limited to treating type II diabetes. Treatment and cure/prevention of a condition are not the same. For example, a condom can prevent AIDS by preventing transmission of HIV, but a condom is useless in treating a person who has already acquired HIV. Moreover, prevention of one disease (type I) diabetes does not automatically mean that the same method can be used to treat or even prevent another very different disease (type II diabetes). While the end result of type I and type II diabetes may be the inability to produce insulin within the body, the disease and their onset are extremely different. This fact is explicitly set forth in Weiner. Type I is characterized by a rapid destruction in beta cells while type II is a progressive disease. Type I is believe to be caused by an autoimmune response and type II tends to have lifestyle causes. In view of the explicit teaching of Weiner and, the lack of any combined teaching in Weiner and Laube that would even suggest trying powdered insulin as a treatment for type II diabetes, applicants respectfully request

allowance of claim 7.

Additional Arguments with Respect to Claims 2, 4, and 11

Claims 3, 4, and 11 require that the gas aerosolizing the dry powder insulin formulation not exceed 400 psi. The Examiner has previously argued that one of ordinary skill would recognize the need for safety when prepressurizing metered dose inhalers. First, the reference to a metered dose inhaler is irrelevant. The claims do not require or even suggest a metered dose inhaler be the delivery tool. Second, and more importantly, the Examiner has not made out a prima facie case of obviousness for claims 3,4, and 11 because none of the cited prior art reference suggest using a pressure less than 400 psi. To the contrary, the art in general (of which not all is necessarily prior art) is replete with references that show a need for pressures well above 400 psi to inhale insulin. For example, applicants direct the Examiner's attention to US Pat No. 5911851 (teaching that "very fine droplets required for the application of a medicament to the lower lung are achieved by the use of fine aperature size nozzles and high pressures, typically with nozzle apertures of less than 20 micrometeres and pressures **in excess of 300 bar** [4350 psi]", *see also* WO 91/14468. Thus, there is no support for the Examiner's assertion that one would limit the pressure to below 400 psi and expect to achieve particle size capable of reaching the lung. And such a teaching is absent from the cited art.

In sum, applicants discovered that powdered insulin can be aerosolized at lower pressures and still result in small enough particles to be useful in treating diabetes according to their method. As the Examiner correctly pointed out, there are safety advantages by keeping the pressure below 400 psi but the fact that it would be desirable to do something does not mean that it was recognized by the prior art as being practical to do so. Here the art teaches that much higher pressures are needed. Accordingly claims 3, 4 and, 11 are allowable over the cited art.

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[1]Applicants note that the Examiner has taken the position that Laube teaches treating diabetes by inhaling liquid insulin. Applicants do not feel that the Examiner needs to reverse this position in order to allow the pending claims give that Laube and Weiner when read together teach away from the claimed invention. Applicants, however, respectfully note that they do not agree that Laube teaches that the remaining limitations that a controlled dose be absorbed into the patient's blood stream in a controlled and repeatable manner. Applicants will assert during an appeal of the final rejection of the pending claims that Laube teaches only that liquid insulin can be inhaled and absorbed into the blood and that it does not teach the claimed method of treating diabetes. In particular, Laube does not teach that liquid insulin can be inhaled to treat diabetes as claimed because the claims require that the amount absorbed by the patient be controlled, repeatable, and in an amount to predictably result in acceptable blood sugar levels. Laube only suggests that it is possible to get liquid insulin into the lung and have it absorbed into the body. Treating diabetes, as they claims recite, requires a level of predictability, repeatability and the ability to maintain acceptable blood sugar levels that are not even hinted at by Laube. Thus, even if the referenced did not teach away from the claimed invention – which they do – the Examiner has not made a prima facie case of obviousness based on the references.

Conclusion

Applicants respectfully request that the Examiner consider the above arguments and then allow of all the pending claims. If the Examiner feels that an interview would be useful in negating the need for an appeal, applicants' attorney would be amenable to an in person or telephonic interview.

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In view of the above, it is respectfully submitted that all claims are in condition for allowance. Early reconsideration of the pending claims is respectfully requested. The Commissioner is hereby authorized to charge any fees in connection with this application and to credit any overpayments to Deposit Account No. 14-1447. The Examiner is hereby invited to contact applicants' attorney if there are any questions concerning this amendment or application.

Respectfully submitted,

Date: September 29, 2005

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